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| 10/773,967 | 02/06/2004 | Sergei Kolomeitsev | VAL 183 P2 | 7346 |
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| MATTHEW R. JENKINS, ESQ. 2310 FAR HILLS BUILDING DAYTON, OH 45419 | | | EXAMINER PRESTON, ERIK D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2834 | |

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/773,967

Applicant(s)

KOLOMEITSEV ET AL.

Examiner

Erik D. Preston

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 25-37 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 and 32-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 6 is objected to because of the following informalities: In the last line of the claim, the phrase "...by the coil..." lacks proper antecedent basis and, for examination purposes, will be interpreted as saying "...by a coil..." Appropriate correction is required.

Claim 15 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 14. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 & 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoemann (US 6133663).

With respect to claim 1, Hoemann teaches a stator for an electric motor (Fig. 6, #10) comprising: a radial array of 2N (N=9) substantially identical teeth, definable as

1,2,3, to 2N; N coils (Fig. 6, #14), one wound around each even tooth; and no coil wound around any odd tooth.

With respect to claim 31, Hoemann teaches the apparatus of claim 1, wherein the coils provide multiple phases.

Claims 2,3,7 & 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Ho et al. (US 5723930).

With respect to claim 2, Ho teaches a stator (Fig. 3, #100) for an electric motor, comprising: a first group of stator teeth, each acting as a magnetic core for a single coil wound around it; and carrying substantially all magnetic flux of the coil wound around it; and a second group of stator teeth, identical in structure to the first group of stator teeth, having no coils wound around them (as seen in Fig. 3).

With respect to claim 3, Ho teaches the stator of claim 2, wherein slots (Fig. 3, #200) are present between adjacent teeth, and some slots contain no coils (as seen in Fig. 3).

With respect to claim 7, Ho teaches an apparatus, comprising a stator for an electric motor, comprising coil slots; a rotor (which inherently exists); coils in respective slots, which fully occupy the respective slots, wherein all currents in any slot are in-phase (as seen in Fig. 3).

With respect to claim 8, Ho teaches the apparatus of claim 7, wherein no currents in any slot have different phases.

Claims 4-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ho et al. (US 5723930).

With respect to claims 4 & 6, Ho teaches a stator for an electric motor, comprising: a radial array of stator teeth, separated by stator slots; and phase coils encircling at least some stator teeth, wherein no slot contains coils from more than one phase, and any slot containing a coil is fully occupied by said coil (Col. 4, Lines 26 & 27). However, even if Ho did not explicitly teach a singular coil fully occupying any slot containing the coil, it would have been obvious to combine any number of coils of the same phase in a single slot into a single integral coil since it has been held that “the use of a one piece construction...would be merely a matter of obvious engineering choice.” (In re Larson, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

With respect to claim 5, Ho teaches the apparatus of claim 4, wherein the radial array of stator teeth comprises at least two teeth (as seen in Fig. 3).

Claims 12-15 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsu (US 2002/0163275).

With respect to claim 12 Hsu teaches a stator (Fig. 7A) for an electric motor comprising: an outer rim (Fig. 7A, #51); stator teeth (Fig. 7A, #41) extending radially inward from the rim; breaks (Fig. 7A, #512) in the stator, which allow any selected individual stator tooth to be removed from the stator; and a pre-formed coil (as seen in Fig. 5, #31) to be mounted onto the selected stator tooth.

With respect to claim 13, Hsu teaches a stator for an electric motor comprising: a radial array of stator teeth, with a stator slot present between adjacent pairs of teeth; a rim surrounding the teeth; and breaks in the rim which allow any selected individual

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teeth to be separated from the stator and a preformed coil to be inserted onto selected individual teeth (as seen in Fig. 7A & 7B).

With respect to claim 14, Hsu teaches the stator of claim 13, wherein structural configuration of the removed stator portion does not require deformation of the pre-formed coil during mounting.

With respect to claim 15, Hsu teaches the stator of claim 13, wherein structural configuration of the removed stator portion does not require deformation of the pre-formed coil during mounting.

With respect to claim 20, Hsu teaches a stator for an electric motor comprising: a radial array of stator teeth, extending inwardly from a circumferential rim; breaks in the rim which allow any selected individual teeth to be separated from the stator and a pre-formed coil to be inserted onto selected individual teeth.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoemann (US 6133663). Hoemann teaches the motor of claim 1, but it does not explicitly teach a motor vehicle which powers the motor. However, electric motors being used in motor vehicles are extremely well known. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electric motor of Hoemann in a motor

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vehicle because it would provide an electrically operable means for raising and lowering windows, actuating windshield wipers, steering the vehicle, etc.

Claim 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho et al. (US 5723930). Ho teaches the motor of claims 5 & 7, but it does not explicitly teach a motor vehicle which powers the motor. However, electric motors being used in motor vehicles are extremely well known. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the electric motor of Hoemann in a motor vehicle because it would provide an electrically operable means for raising and lowering windows, actuating windshield wipers, steering the vehicle, etc.

Claims 16,17 & 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vollmer (US 6879079) in view of Greer (US 2517105).

With respect to claim 16, Vollmer teaches a collection of parts for constructing a stator for an electric motor, comprising: A plurality of coils; a first set of stator teeth having radially outer ends which fit into the coils; and a second set of stator teeth, each having a segmented rim mounted thereon, but it does not teach that said coils are pre-formed. However, Greer teaches pre-formed stator coils (Col. 1, Lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coil of Vollmer in view of the pre-formed coil as taught by Greer because it has better heat transmission and radiation characteristics than conventional motor coils (Greer, Col. 4, Lines 1-8).

With respect to claim 17, Vollmer in view of Greer teaches the collection of claim 16, and Vollmer teaches that a radial array of stator teeth connected to an outer rim is

generated when the first set of stator teeth is positioned in odd-numbered sectors of a circle, and the second set of stator teeth is positioned in even-numbered sectors of the circle.

With respect to claim 19, Vollmer in view of Greer teaches the collection of claim 17, and Vollmer teaches that the segments of the rim, together with radially outer segments of stator teeth in the first set, collectively form circular periphery of the stator.

With respect to claim 20, Vollmer teaches a stator for an electric motor, comprising: A radial array of stator teeth, extending inwardly from a circumferential rim; breaks in the rim which allow any selected individual teeth (the teeth that are selected to have coils placed thereon) to be separated from the stator, and a coil to be placed onto selected individual teeth, but it does not teach that said coils are pre-formed. However, Greer teaches pre-formed stator coils (Col. 1, Lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coil of Vollmer in view of the pre-formed coil as taught by Greer because it has better heat transmission and radiation characteristics than conventional motor coils (Greer, Col. 4, Lines 1-8).

With respect to claim 21, Vollmer in view of Greer teaches the stator of claim 20, and Vollmer teaches that parts of the rim are connected to some teeth when removed, preventing insertion of pre-formed coils onto such teeth.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schunk et al. (US 6812612) in view of Greer (US 2517105). Schunk teaches a collection of parts for constructing a stator for an electric motor, comprising: A plurality of coils (Fig. 1, #2); a first set of stator teeth (Fig. 4, #4) having radially outer ends which fit into the

coils; and a second set of stator teeth (Fig. 4, #5), each having a segmented (laminated) rim mounted thereon; a radial array of stator teeth connected to an outer rim is generated when the first set of stator teeth is positioned in odd-numbered sectors of a circle, and the second set of stator teeth is positioned in even-numbered sectors of the circle wherein the segments of the rim collectively form a circular periphery of the stator, but it does not teach that said coils are pre-formed. However, Greer teaches pre-formed stator coils (Col. 1, Lines 1-5). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the coils of Schunk in view of the pre-formed coil as taught by Greer because it has better heat transmission and radiation characteristics than conventional motor coils (Greer, Col. 4, Lines 1-8).

Response to Arguments

Applicant's arguments with respect to claims 1-15, 20 & 31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 4/25/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is noted that

replacing the conventional coils on the stator of Vollmer with the pre-formed coils as is taught by Greer would have been obvious to one of ordinary skill in the art at the time of the invention because it would provide the stator of Vollmer with the benefits of the pre-formed coils of Greer.

In response to the applicants argument that the rim of Schunk is not segmented, it is noted that Schunk's rim is laminated, and therefor can be reasonably construed as being segmented.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6759780


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

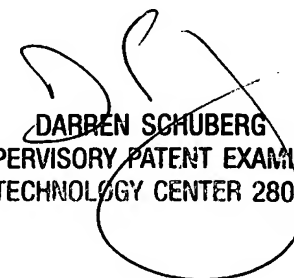
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik D. Preston whose telephone number is (571)272-8393. The examiner can normally be reached on Monday through Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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